Memorandum

To: Water Allocation Project - Impact Subcommittee

From: Sally Walkerman / Beth Collins

Date: October 21, 2002

Re: Charge to the Impact Subcommittee

The Impact Subcommittee has been charged with determining the social, economic, and environmental impact of a water allocation plan. As a subcommittee, we have a lot of discretion on how to approach this task. In order to jump-start Thursday's discussion of our goals and work plan, we have prepared the following general outline of the issues. We look forward to meeting all of you and hope that together we can define a practical and productive approach to this task.

We propose to evaluate the impacts of current development and water use trends using the Water Resource Board's two fact based scenarios to focus our inquiry. Secondly we will evaluate the impacts of the water allocation and conservation pricing proposals as they take form. The impacts of water-use, conservation and drought reach into every sector:

- Residential
- Business (commerce, industry, tourism)
- Agriculture
- Waste water disposal
- Biological habitats
- Groundwater and surface water
- Overall economic impact

The impacts fall into two major categories: water consumption and the consequences of land use. The complex economic and environmental interrelationships make it important to stand back and look at the big picture of this project. We also must keep in mind that most uses have a combination of consequences, more like a web of actions and impacts than a clear cause-effect system. Communicating policy-relevant lessons from our analysis of these complex systems should be a high priority for the subcommittee.

Our overall goal is to determine economic, social and environmental consequences of the plans that emerge from the Water Allocation Program vs. a business-as-usual scenario. We will also make recommendations that could better the whole plan or specific parts during the decision-making process. This may include coming up with and evaluating actions and solutions that are not currently on the table. The process requires interaction with other subcommittees throughout the year.

Our job over the coming months will be to evaluate potential impacts and determine which impacts are most relevant to an impact study. We will consider the magnitude of an impact, what sectors it affects, and in what ways. As other subcommittees make their presentations, we will learn about possible additional impacts and some of the issues associated with them.

Questions to Consider

Residents, Business & Agriculture:

- How much water does each sector use and how much water are these sectors projected to require in the future?
- How much water is available on a renewable basis for these sectors?
- What will be the cumulative impact of current land use decisions on the water supply and drought readiness for the future? What long-term actions can be taken to mitigate the impacts of future droughts? Policies? Technologies? Social Awareness?
- How much does the water cost to pump, transport and dispose of?
- What is the relative economic impact of cutting water use in a given sector during drought crisis and long term?
- What is the elasticity of demand in each sector? How will water prices affect sectors' development and sustainability?
- What is the relative potential for conservation in each sector?

Environment:

- Where are the water sensitive ecosystems? How much water do they need? (forest, wetland, rivers & stream, coastal)
- How can we gauge or illustrate the value of ecosystem functions? What costs can be avoided through resource protection? What additional costs might result from current development trends?

Current Issues:

- **Unknowns**: In 1988, seventeen percent of water-use was unmetered and we are uncertain for what purpose this water was used. The Water Resources Board will provide us with more recent data when it is available.

- **Multi-Year Drought**: The East Coast has been experiencing a drought for approximately four years, and Rhode Island is not exempt. Reservoir, stream, river and lake levels are below normal and there has been less precipitation than normal years. The public often assumes that after a good soaking rain, the drought is over—this is not true.

- **Residential Development**: Population growth in Rhode Island is slow, but the population is moving out of established neighborhoods and building houses on larger plots of land in suburban and recently rural communities. Most new residences are on wells and septic systems. This population disbursement is a major driver of increased residential water consumption and changes in watershed function.

- **Commercial Development**: Residential sprawl promotes commercial development in once-rural communities and areas.

- **Private Wells**: Ten percent of Rhode Island residences are on private wells. These are difficult to monitor for water consumption and it is almost impossible for the state to ensure their water quality.

- **Storm Drains**: In cities, large quantities of precipitation are collected in storm drains and funneled to the ocean, instead of seeping into the groundwater system.

- **Public Awareness**: Most of the public is unaware of a water issue in Rhode Island. This means they are unsure of how to conserve water, where the resources are for them to learn, and how great the need is.

- **Industrial Water-Use**: Some manufacturing and power plants are highly consumptive and water dependent.

- **Tourism**: Water is a major recreational amenity for Rhode Island's tourism industry, including canoeing, sailing, swimming and fishing. In some areas of the world, the hospitality sector has taken a high profile role in water conservation. Hotels and restaurants can be highly visible adopters of "green" practices.

- **Habitat Depletion**: Fragmentation of the environment by low-density development combined with low water-levels destroy the function of ecosystems.